## **Patent Claims**

1. Liquid-crystalline compounds of the formula I

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$$R^{1}-(A^{1}-Z^{1})_{a}$$
  $(Z^{2}-A^{2})_{b}$   $-CF_{2}O-(A^{3}-Z^{3})_{c}$   $-A^{4}-R^{2}$   $I$ 

in which

 $R^1$  and  $R^2$ 

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each, independently of one another, denote H, halogen, a halogenated or unsubstituted alkyl or alkoxy radical having 1 to 15 C atoms, where, in addition, one or more CH₂ groups in these radicals may each, independently of one another, be replaced by -C≡C-, -CH=CH-, -O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another, where one of the radicals R¹ and R² may alternatively denote CN, OCN, SCN, NCS or SF₅,

20  $A^1, A^2, A^3$  and  $A^4$ 

each, independently of one another, denote

or —

2<sup>1</sup>, Z<sup>2</sup> and Z<sup>3</sup> each, independently of one another, denote -CO-O-, -O-CO-, -CF<sub>2</sub>O-, -OCF<sub>2</sub>-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -CH<sub>2</sub>CH<sub>2</sub>-,

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-(CH<sub>2</sub>)<sub>4</sub>-, -C<sub>2</sub>F<sub>4</sub>-, -CH<sub>2</sub>CF<sub>2</sub>-, -CF<sub>2</sub>CH<sub>2</sub>-, -CF=CF-, -CH=CH-, -C $\equiv$ C- or a single bond, and

- a, b and c each, independently of one another, denote 0, 1, 2 or 3, where  $a + b + c \le 3$ .
  - 2. Liquid-crystalline compounds of the formula IA

10  $R^1 \longrightarrow H$  A  $CF_2O \longrightarrow CF_2O$  A

in which

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  R<sup>1</sup>, R<sup>2</sup>, a, b, c and have the meanings indicated in Claim 1, where a + b = 1 or 2, and
  - L<sup>1</sup> and L<sup>2</sup> each, independently of one another, denote H or F.
  - 3. Liquid-crystalline compounds according to Claim 1 or 2, characterised in that a = 1 and b = 0 or a = 0 and b = 1.
- 4. Liquid-crystalline compounds according to Claim 2, characterised in that L<sup>1</sup> denotes fluorine and L<sup>2</sup> denotes fluorine or hydrogen.
  - 5. Liquid-crystalline compounds according to Claim 2, characterised in that L<sup>1</sup> and L<sup>2</sup> denote fluorine.
- 30 6. Liquid-crystalline compounds of the formulae I1 to I31

- 159 -

$$R^1$$
  $O$   $H$   $CF_2O$   $O$   $X$   $I2$ 

$$R^1$$
  $O$   $H$   $CF_2O$   $O$   $F$   $X$ 

$$R^1 \longrightarrow CH_2CH_2 \longrightarrow CF_2O \longrightarrow X$$
 I4

$$R^1$$
  $CH_2CH_2$   $H$   $CF_2O$   $O$   $X$  15

$$R^1$$
  $\longrightarrow$   $CH_2CH_2$   $\longrightarrow$   $CF_2O$   $\longrightarrow$   $CF_2O$   $\longrightarrow$   $CF_2O$   $\longrightarrow$   $O$   $\longrightarrow$ 

$$R^1$$
  $O$   $H$   $CF_2O$   $O$   $O$   $X$   $I7$ 

$$R^1$$
  $O$   $H$   $CF_2O$   $O$   $O$   $X$   $I8$ 

$$R^1$$
  $O$   $H$   $CF_2O$   $O$   $X$   $I10$ 

$$R^1$$
  $O$   $H$   $CF_2O$   $O$   $O$   $X$   $I11$ 

$$R^{1}$$
  $O$   $H$   $CF_{2}O$   $O$   $O$   $F$   $X$   $I12$ 

$$R^1$$
  $CF_2O$   $O$   $COO$   $O$   $X$   $I13$ 

$$R^{1}$$
  $CF_{2}O$   $O$   $COO$   $O$   $X$   $I14$ 

$$R^{1}$$
  $CF_{2}O$   $O$   $COO$   $O$   $F$   $COO$   $COO$ 

$$R^{1} \longrightarrow \begin{array}{c} O \\ H \end{array} \longrightarrow \begin{array}{c} CF_{2}O \longrightarrow \begin{array}{c} (F) \\ CF_{2}O \longrightarrow \begin{array}{c} O \\ (F) \end{array}$$

$$R^{1} \longrightarrow \begin{array}{c} O \\ H \end{array} \longrightarrow \begin{array}{c} CF_{2}O \longrightarrow \begin{array}{c} (F) \\ CF_{2}O \longrightarrow \end{array} \longrightarrow \begin{array}{c} F \\ O \longrightarrow \\ (F) \end{array}$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow CF_{2}O \longrightarrow F$$

$$(F) \qquad F$$

$$(F) \qquad F$$

$$R^1$$
  $H$   $CF_2O$   $O$   $X$   $I19$ 

$$R^1$$
  $H$   $CF_2O$   $O$   $X$   $I20$ 

$$R^1$$
 $H$ 
 $CF_2O$ 
 $O$ 
 $F$ 
 $I21$ 

$$R^1$$
  $\longrightarrow$   $H$   $\longrightarrow$   $CF_2O$   $\longrightarrow$   $X$   $I22$ 

$$R^{1} \longrightarrow \begin{array}{c} O \\ H \end{array} \longrightarrow \begin{array}{c} F \\ O \\ \end{array} \longrightarrow \begin{array}{c} F \\ O \\ \end{array} \longrightarrow \begin{array}{c} X \\ I23 \end{array}$$

$$R^{1} \longrightarrow \begin{array}{c} O \\ H \end{array} \longrightarrow \begin{array}{c} H \\ CF_{2}O \longrightarrow \begin{array}{c} F \\ O \end{array} \longrightarrow \begin{array}{c} I \\ I24 \end{array}$$

$$R^{1} \longrightarrow O \longrightarrow O \longrightarrow CF_{2}O \longrightarrow X \qquad 125$$

$$R^1$$
 $O$ 
 $O$ 
 $CF_2O$ 
 $O$ 
 $F$ 
 $C$ 
 $F$ 
 $F$ 
 $F$ 
 $F$ 
 $F$ 
 $F$ 
 $F$ 
 $F$ 

$$R^1$$
  $O$   $O$   $CF_2O$   $O$   $X$  130

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$$R^{1} \longrightarrow O \longrightarrow O \longrightarrow O \longrightarrow CF_{2}O \longrightarrow O \longrightarrow O \longrightarrow X \qquad I31$$

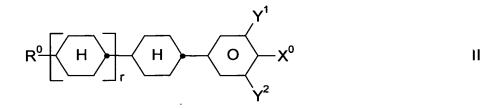
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in which R<sup>1</sup> has the meaning indicated in Claim 1 and X has the meaning of R<sup>2</sup>.

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- 7. Liquid-crystalline medium comprising at least two mesogenic compounds, characterised in that it comprises at least one compound of the formula I according to Claim 1.
- 25 8. Liquid-crystalline medium according to Claim 7, characterised in that it comprises one or more compounds selected from the group consisting of the general formulae II to IX

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## in which

denotes n-alkyl, oxaalkyl, fluoroalkyl, alkenyloxy or alkenyl, each having up to 9 C atoms,

Xo denotes F, Cl, halogenated alkyl, halogenated alkenyl, halogenated alkenyloxy or halogenated alkoxy having up to 7 C atoms,

Zo denotes -CH=CH-, -C<sub>2</sub>H<sub>4</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -C<sub>2</sub>F<sub>4</sub>-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -CF=CF-, -CF<sub>2</sub>O-, -OCF<sub>2</sub>- or -COO-,

 $Y^1,Y^2,$   $Y^3$  and  $Y^4$  each, independently of one another, denote H or F, and r is 0 or 1.

- 9. Use of the liquid-crystalline medium according to Claim 7 or 8 for electro-optical purposes.
- 20 10. Electro-optical liquid-crystal display containing a liquid-crystalline medium according to Claim 7 or 8.

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